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**REMARKS**

Claims 1-7, 11-21, 25-31 and 34-42 are pending in the present application. Claim 41 has been amended, and Claim 43-45 have been added, leaving Claims 1-7, 11-21, 25-31 and 34-47 for consideration upon entry of the present Amendment. The Specification has been amended to correct certain typographical errors, as explained in detail below.

Support for new Claims 43-45 can at least be found in the Specification at Page 8, lines 10-11.

Support for new Claims 46-47 can at least be found in the Specification at Page, lines 24-27.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

**IDS Not Considered**

An IDS submitted on March 21, 2001 (a copy of which is attached hereto for the Examiner's convenience) has not been signed and acknowledged by the Examiner. Applicants respectfully request acknowledgement of the IDS and the art contained therein.

**Specification**

Applicants have amended the last paragraph from page 10 of the original specification to correct a typographical error. More particularly, the misspelled word "wahscoat" has been amended to "washcoat."

**Claim Rejections Under 35 U.S.C. § 112, Second Paragraph**

Claim 41 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have amended Claim 41 to correct a typographical error. More particularly, Claim 41 has been amended such that it now depends from Claim 40. Accordingly, Applicants respectfully request the withdrawal of the rejection.

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Claim Rejections Under 35 U.S.C. § 102(b)

Claims 36-42 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by U.S. Patent No. 5,662,869 to Abe et al. with U.S. Patent Application No. 2002/0132724 to Labarge et al. Applicants respectfully traverse this rejection.

Applicants independent Claim 36 is directed to a catalyzed adsorber for treating exhaust gas, comprising: a substrate; a zeolite underlayer disposed over the substrate, wherein the zeolite has a sodium content of less than 0.1 wt.% of the total weight of the zeolite; and a catalyst overlayer disposed over the underlayer, wherein the overlayer is zeolite free, and wherein an overlayer non-catalyst loading is less than about 1.0 g/in<sup>3</sup>.

Abe et al. disclose an exhaust gas purification system comprising an adsorbant (Abstract). The catalyst-adsorbant can comprise a layered structure with a first layer of zeolite and noble metal and a second layer of a composite oxide of Al<sub>2</sub>O<sub>3</sub>-CeO<sub>2</sub> with a noble metal coated on the first layer. (Col. 6, lines 40-47). The first layer containing the zeolite can have 5-40 g/ft<sup>3</sup> (0.0029 to 0.0232 g/in<sup>3</sup>) of noble metal. (Col. 5, lines 63-64). The total amount of noble metal in the two layers is 20-130 g/ft<sup>3</sup>. (Col. 6, lines 35-40).

Labarge et al. teach that high silica content zeolites having silica to alumina ratios of 30 or more have as little as 0.05 wt% sodium or ammonium sites that can be exchanged with barium. (Col. 2, [0021]).

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Variant Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

Abe et al. do not teach, *inter alia*, a zeolite underlayer disposed over the substrate, wherein the zeolite has a sodium content of less than 0.1 wt.% of the total weight of the zeolite. As such, they do not disclose each and every element of Applicant's claimed invention. Therefore, Applicant's independent Claim 36 is not anticipated.

Further, the Examiner used the teachings of Labarge et al. to make an anticipation rejection argument based on inherency. In order to support an anticipation rejection based on inherency, an Examiner must provide factual and technical grounds establishing that the inherent feature necessarily flows from the teachings of the prior art. *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Int. 1990); *In re Oelrich*, 666 F.2d 578, 581, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981) (holding that inherency must flow as a necessary conclusion from the prior art,

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not simply a possible one).

Labarge et al. teach that high silica content zeolites having silica to alumina ratios of 30 or more have as little as 0.05 wt% sodium or ammonium sites that can be exchanged with barium (Col. 2, [0021]). Labarge et al. do not teach a sodium concentration in the zeolite, they merely discuss the amount of sodium or ammonium sites that can be exchanged with barium, and therefore the amount of barium possible. This reference is not teaching a sodium content a sodium content of less than 0.1 wt.%. Absent in both references is the teachings necessary to relate sodium sites to a sodium concentration. As such, the Examiner has not provided the factual and technical grounds establishing that the alleged inherent feature necessarily flows from the teachings of the prior art. As such, Applicants submit that the Examiner has not made a case of anticipation of present Claims 36-42 based on inherency.

Furthermore, with regard to the limitation "zeolite free", as correctly noted by the Examiner, Abe et al. do not teach that the catalyst layer contains any zeolite. Applicants submit that "[t]he identical invention must be shown in as complete detail as is contained in...the claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989; MPEP 2131. Abe et al. do not expressly teach or suggest that that the catalyst layer is zeolite free.

For at least the forgoing reasons, Applicants contend that the claimed sodium concentration and the design of the catalyzed adsorber of the present application are non-obvious and not anticipated by Abe et al. Accordingly, Applicants' independent Claim 36 is not anticipated. Moreover, as dependent claims from an allowable independent claim, Claims 37-42 are, by definition, also allowable.

Additionally, with regard to Applicants' Claim 41, Examiner has not shown that this claim is anticipated. The Examiner stated that Abe et al. teach that the zeolite may be a faujasite zeolite such as USY having a  $\text{SiO}_2/\text{Al}_2\text{O}_3$  molar ratio of at least 20, which corresponds to a Si/Al ratio of at least 10. (Paper 3).

Generally, the Examiner is correct that "when, as by a recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if one of them is in the prior art." *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). However, "When the prior art discloses a range which touches, overlaps or is within the claimed range, but

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no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with 'sufficient specificity to constitute an anticipation under the statute.' What constitutes a 'sufficient specificity' is fact dependent." MPEP 2131.03.

Applicants Claim 41 teach, *inter alia*, that the faujasite has a Si/Al ratio of about 3.0 to about 10. The Examiner stated that Abe et al. teach that the zeolite may be a faujasite zeolite such as USY having a  $\text{SiO}_2/\text{Al}_2\text{O}_3$  molar ratio of at least 20, which corresponds to a Si/Al atomic ratio of at least 10. (Paper 3). While these ranges abut, the Examiner has not shown with "sufficient specificity" that the claimed range is anticipated. For example, Abe et al. teach a molar ratio of at least 80 is more preferred. As such, examples would be not found with Applicants' claimed range. Accordingly, even if the Examiner were to find independent Claim 36 anticipated, which it is not, Claim 41 is not anticipated.

#### Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-7, 9-21, and 23-31 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over EP 0 848 984 to Mizuno et al. Applicants respectfully traverse this rejection.

Applicants' independent Claim 1 is directed to a catalyzed adsorber for treating exhaust gas, comprising: a substrate; a zeolite underlayer disposed over the substrate; and a catalyst overlayer disposed over the underlayer, wherein the overlayer is zeolite free, wherein an overlayer non-catalyst loading is less than about  $1.0 \text{ g/in}^3$ , and wherein an overlayer catalyst loading is about 0.1 to about  $0.5 \text{ g/in}^3$ .

Applicants' independent Claim 19 is directed to a method for making a catalyzed adsorber system for treating exhaust gas, comprising: providing a substrate; disposing a zeolite underlayer over the substrate; and disposing a catalyst overlayer over the underlayer, wherein the overlayer is zeolite free, wherein an overlayer non-catalyst loading is less than about  $1.0 \text{ g/in}^3$ , and wherein an overlayer catalyst loading is about 0.1 to about  $0.5 \text{ g/in}^3$ .

Mizuno et al. disclose a catalyst for exhaust gas purification. (Abstract). As noted by the Examiner, Mizuno et al. teach by way of example the preparation of a catalyst adsorbent (page 13-14) in which the catalyst layer has a non-catalyst loading of about  $0.82 \text{ g/in}^3$  and a catalyst loading of  $0.087 \text{ g/in}^3$ . (Paper 12, page 6). Moreover, the Examiner states that the difference

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between the Applicants claims is that the reference does not specifically disclose the claimed combination of non-catalyst loading less than about 1 g/in<sup>3</sup> and a catalyst loading of about 0.1 to about 0.5 g/in<sup>3</sup>. (Paper 12, page 7). Rather, They teach the amount of noble metal contained in catalyst layer is preferably 10-700 g per ft<sup>3</sup>. (Page 4, line 2). When the amount of noble metal supported is more than 700 g per ft<sup>3</sup>, the distance between noble metal molecules is near and the noble metal tends to cause cohesion, resulting in reduced purification by noble metal. (Page 4, lines 6-7).

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

As correctly noted by the Examiner, Mizuno et al. do not specifically disclose Applicants' claimed combination of an overlayer non-catalyst loading of less than about 1.0 g/in<sup>3</sup>, and a catalyst loading of about 0.1 to about 0.5 g/in<sup>3</sup>. (Paper 12, page 7). Since the reference does not disclose each an every of Applicants' claimed invention, the Examiner must provide some motivation or suggestion to modify the reference with a reasonable expectation of suggest. The Examiner states that it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have used higher amounts of noble metals. (Paper 12, page 7). Although Mizuno et al. teach higher amounts of noble metal may be used, they also teach that this will result in reduced purification by noble metal. Further, Mizuno et al. do not expressly teach a non-catalyst loading of less than about 1.0 g/in<sup>3</sup>. As such, Minuzo et al., viewed as whole, fail to provide the necessary suggestion or motivation to obtain Applicants' Claimed invention. Accordingly, Applicants' independent Claims 1 and 19 are non-obvious. As dependent Claims from an allowable independent claim, Claims, 2-7, 9-18, 20-21, and 23-31 are by definition also allowable.

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Furthermore, with regard to the limitation "zeolite free", as correctly noted by the Examiner, Mizuno et al. do not teach that the catalyst layer contains any zeolite. Applicants submit Mizuno et al. silence, i.e., absence of express teachings or suggestion, of the limitation "zeolite free" would not have lead a person of ordinary skill in the art to make Applicants' claimed invention with any reasonable expectation of success.

Additionally, with regard to Applicants' Claim 14, the Examiner has not made a *prima facie* case for obviousness. Minuzo et al. teach that the zeolite preferably has a  $\text{SiO}_2/\text{Al}_2\text{O}_3$  molar ratio of 40 or more. Applicants' claim teaches, *inter alia*, that the faujasite has a Si/Al ratio of about 3.0 to about 10. Applicants' range does not fall with the range taught by Minuzo et al. Accordingly, even if the Examiner were to find independent Claim 1 obvious, which it is not, Claim 14 is not obvious.

Claims 34-42 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over EP 0 848 984 to Mizuno et al. with U.S. Patent Application No. 2002/0132724 to Labarge et al. Applicants respectfully traverse this rejection.

Applicants' submit, as is clearly set forth in *In re Shetty*, even that which is inherent in the prior art, if not known at the time of the invention, *cannot* form a proper basis for rejecting the claimed invention as obvious under §103. *In re Shetty*, 566 F.2d 81,86, 195 U.S.P.Q. 753, 756-57 (C.C.P.A. 1977). Inherency "is quite immaterial if... one of ordinary skill in the art would not appreciate or recognize the inherent result." *In re Rijckaert*, 9 F.3d 1531, 1533, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993). In other words, the use of inherency to reject a claim as obvious is not proper. Reconsideration and withdrawal of this rejection is respectfully requested.

Minuzo et al. do not teach or suggest Applicants' claimed invention. More particularly, in addition to arguments made above, Minuzo et al. do not teach or suggest a zeolite having a sodium content of less than 0.1 wt.% of the total weight of the zeolite. The Examiner tried to cure the deficiencies of Minuzo by improperly using Labarge et al. to base an inherency argument. Since inherency is an improper basis for an obviousness rejection, the Examiner has not made a *prima facie* case of obviousness. As such, Applicant's independent Claim 36 is allowable. As dependent claims from an allowable independent claim, Claims 37-42 are by definition also allowable.

Additionally, even if the rejection was proper, the Examiner has still failed to establish a

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*prima facie* case of obviousness. A "feature is inherent if it naturally occurs under the conditions set forth in the reference..." *Consolidated Aluminum Corp. v. Foseco International Ltd.*, 10 USPQ2d 1143, 1165 (N.D. Ill. 1988). Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *Continental Can Co. v. Monsanto*, 948 F.2d 1264, 1269 (Fed. Cir. 1991). The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (*reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art*); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981); *emphasis added*. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Furthermore, "in relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)" MPEP 2112.

Labarge et al. teach that high silica content zeolites having silica to alumina ratios of 30 or more have as little as 0.05 wt% sodium or ammonium sites that can be exchanged with barium (Col. 2, [0021]). Labarge et al. do not teach a sodium concentration in the zeolite, they merely discuss the amount of sodium or ammonium sites that can be exchanged with barium, and therefore the amount of barium possible. This reference is not teaching a sodium content of less than 0.1 wt.%. Absent in both references is the teachings necessary to relate sodium sites to a sodium concentration. As such, the Examiner has not provided the factual and technical grounds establishing that the alleged inherent feature naturally occurs under the conditions set forth in the reference. As such, Applicants submit that the Examiner has not made a *prima facie* case of obviousness of present claims 36-42.

Additionally, with regard to Claim 41, the above cited references alone or in combination

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fail to teach or suggest, *inter alia*, a zeolite having a sodium content of less than 0.1 wt.% of the total weight of the zeolite, wherein the zeolite is a faujasite having a Si/Al ratio of about 3.0 to about 10. As such, even if the Examiner were to find Claim 36 obvious, which it is not, Claim 41 is still allowable.


It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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